THE SCHENDYLIDÆ OF NORTHEASTERN NORTH AMERICA (CHILOPODA: GEOPHILOMORPHA: SCHENDYLIDÆ)

By Ralph E. Crabill, Jr.

Department of Entomology, Cornell University; Ithaca College

The members of this interesting family may be found in all of the faunal realms of the earth. The Schendylidæ embrace at least twenty-seven genera, over half of which are represented in the New World, chiefly in the tropics. Mainly tropical, this family is known from the more temperate regions of the Western Hemisphere by relatively few species, four of which are known to inhabit the northeastern United States.

Schendylidæ

Schendylidæ Cook, Proc. U. S. Nat. Mus., XVIII, p. 70, (1895).
Ballophilidæ Cook, Proc. U. S. Nat. Mus., XVIII, p. 70, (1895).
Schendylini Verhoeff [tribe of subfamily Geophilinæ], Nov. Acta Leop. Acad., LXXVII, p. 414, (1901).
Schendylidæ Verhoeff, Bronn Kl. u. Ordn., V, p. 275, (1908).
Schendylinæ Brolemann, Arch. Zool. Expér., (5) III, p. 312, (1909).

The mandible which possesses both a dentate lamella and a row of simple teeth will identify the members of the family.

Family Diagnosis.[1]—Antennæ: filiform, weakly attenuate distally. Cephalic plate: slightly longer than wide. Labrum: unipartite, usually separated at least laterally from clypeus; usually medially concave and dentate. Mandible: with a dentate lamella and with a row of simple teeth. First maxillæ: coxites completely fused; with or without well-developed telopodital and coxosternal lappets. Second maxillæ: coxites completely fused medially; telopodital apical claw either simple or pectinate dorsally and ventrally. Prehensorial segment: telopodites not surpassing anterior margin of cephalic plate, lateral telopodite surfaces generally largely concealed from above; prosternum with or without chitin lines. Tergites: preparatergites and

[1] The familial and generic diagnoses presented here apply to their groups primarily as they are represented in eastern North America.

paratergites lacking. Sternites: with or without ventral pore fields. Ultimate pedal segment: each coxopleuron either with freely opening pores or with depressed pits into which pores open; tarsus entire or bipartite; pretarsus present or absent, when present appearing as a sclerotized claw.

KEY TO THE GENERA

——— Ultimate pretarsus absent. Ventral pore fields present
Schendyla Bergsöe and Meinert

——— Ultimate pretarsus present. Ventral pore fields absent
Escaryus Cook and Collins

Schendyla Bergsöe and Meinert

Schendyla Bergsöe and Meinert, Naturh. Tidsskr., (3) IV, p. 103, (1866). TYPE: *Geophilus nemorensis* C. L. Koch, 1836 [= *Schendyla* (*S.*) *nemorensis* (C. L. Koch)]. (Monobasic.)

The absence of an ultimate pretarsus will readily distinguish *Schendyla.*

GENERIC DIAGNOSIS.—First maxillæ: coxosternum without lappets; telapodites with tiny lappets. Second maxillæ: apical claw simple, its ventral and dorsal edges non-pectinate. Ventral pore fields: each consisting of a small number of slightly pigmented pores and occurring upon a variable number of anterior sternites; each usually in the form of a small elliptical and centrally situated group of pores. Ultimate pedal segment: each coxopleuron with two large sunken pits which do not open directly onto the coxopleural surface; second tarsus only about a third the diameter of the first tarsus; pretarsus absent; male and female ultimate legs greatly swollen, those of the male but slightly more inflated than those of the female.

Component Species.—this genus, which consists of some seven species, a few of which are polytypic, is represented in Europe, Asia, North and South America. It has been divided into two subgenera, *Echinoschendyla* and *Schendyla,* but only the latter is known from the northeast and only by a single species that has undoubtedly been introduced from Europe.

Schendyla nemorensis (C. L. Koch)

Geophilus nemorensis C. L. Koch, Deutsch. Crust. Myr. Arach., (1836).

Poabius bistriatus C. L. Koch, Koch-Panzer, Krit. Revis., III, p. 183, (1847).

Linotœnia nemorensis (C. L. Koch), Myr., II, p. 26, (1863).

Geophilus tyrolensis Bergsöe and Meinert, Naturh. Tidsskr., (3) IV, p. 73, (1866).

Schendyla nemorensis (C. L. Koch),—Bergsöe and Meinert, Naturh. Tidsskr., (3) IV, p. 105, (1866).

Geophilus gracilis Harger, Amer. Journ. Sci. Arts, (3) IV, p. 18, (1872).

Schendyla (*S.*) *nemorensis* (C. L. Koch),—Brolemann and Ribaut, Arch. Mus. Paris, (5) IV, p. 154, (1912).

Specific Diagnosis.—Length: to 28 mm. Color: pale yellowish-white. Labrum: with about fifteen weakly sclerotized teeth. Mandible: dentate lamella with 5–7 teeth. Ventral pore fields: present on sternite two through about fifteen, eventually dividing into two paramedian fields; each field consisting of some twenty-five pores. Pairs of legs: 39–55. Ultimate pedal segment: second tarsus much thinner and shorter than the first, being about a third as long and wide.

Ethology.—This tiny species is usually discovered in humus and debris or infrequently beneath rocks. By means of a Berlese funnel it may be collected in large numbers in most of its localities. I have taken it most commonly in the Ithaca region between late March and early June oftentimes while the temperature (F.) was hovering in the low fifties.

Distribution.—Apart from the northeastern localities listed below, *nemorensis* is known only from Utah. NEW HAMPSHIRE: Laconia. MASSACHUSETTS: Hough's Neck; Blue Hills; Mattapan; Forest Hills. CONNECTICUT: Mt. Higby Reservoir; New Haven. NEW YORK: Taughannock Falls State Park; Ithaca; Clyde; Albany; Baiting Hollow; Hunter Mountain; Staten Island; Kenwood. OHIO: Delaware County. ILLINOIS: Chicago Ridge; Chicago; Urbana; Champaign. MICHIGAN: Detroit; Willow Run.

Escaryus Cook and Collins

Escaryus Cook and Collins, Proc. U. S. Nat. Mus., XIII, p. 391, (1891). TYPE: *Escaryus phyllophilus* Cook and Collins, 1891 [= *Geophilus urbicus* Meinert = *Escaryus urbicus* (Meinert)]. Subsequent designation of Cook, Proc. U. S. Nat. Mus., XVIII, p. 71, (1895).

The absence of ventral pore fields will identify *Escaryus*.

GENERIC DIAGNOSIS.—First maxillæ: coxosternum with or without rudimentary lappets; telopodite with long or short lappets. Second maxillæ: apical claw pectinate along dorsal and ventral edges. Ventral pore fields: absent. Ultimate pedal segment: each coxopleuron with numerous singly and freely opening pores; second tarsus but slightly narrower than the first; pretarsus present, unguiform; male ultimate legs greatly swollen, those of female conspicuously thinner.

COMPONENT SPECIES.—The genus includes at least eleven forms which are known from central and eastern Asia, the Behring Island, Alaska, and the United States. Three well-defined species are known from the northeast.

KEY TO THE SPECIES

1. 57–59 pairs of legs. Ultimate pretergite laterally suturate. First maxillary telopodite lappets long, at least half as long as the second telopodite article.[2] Coxopleural pores small and numerous ..... *missouriensis* Chamberlin
— 41–49 pairs of legs. Ultimate pedal pretergite laterally with or without sutures. First maxillary telopodite lappets short, at most (and rarely) half as long as the second telopodite article. Coxopleural pores large and small, numbering about 18–35 2
2. 47–49 pairs of legs. Ultimate pedal pretergite non-suturate laterally. Prehensorial telopodite without a femoral denticle. Cephalic plate much longer than wide (37: 27). Labral teeth 10–13. Coxopleural pores 18–25 ..... *liber* Cook and Collins
— 41 pairs of legs in both sexes. Ultimate pedal pretergite laterally suturate. Prehensorial telopodite with a distinct femoral denticle. Cephalic plate slightly longer than wide (26: 25). Labral teeth 13–18. Coxopleural pores 25–35 ..... *urbicus* (Meinert)

Escaryus missouriensis Chamberlin

Escaryus missouriensis Chamberlin, Ent. News, LIII, p. 185, (1942). [St. Louis, Missouri.]

The numerous pairs of legs will readily identify this species.

SPECIFIC DIAGNOSIS.—Length: to 65 mm. Color: yellowish-brown. Cephalic plate: much longer than wide (47: 38). Labrum: with some 16 teeth. First maxillæ: telopodite lappets relatively long, the apex of each attaining at least half the length of the associated telopodite second article; coxosternal

[2] The telopodite apparently consists of two articles, the basal one of which gives rise to the telopodital lappet. The distal article is divided into two regions, a proximal sclerotized part and a distal membranous portion.

lappets tiny, each represented by a low setose mound.[3] Prehensorial telopodite: femoral denticle present, approximately as large as that of the tibia. Pairs of legs: 59 in the male holotype, 57 in the only female known; legs relatively densely hirsute. Ultimate pedal segment: each coxopleuron with some 70–80 tiny pores; pretergite suturate laterally.

Distribution.—The species is known from but two localities, the environs of St. Louis, Missouri, and Dallon's Spring Cave, Indiana. I have examined the Indiana female.

Escaryus liber Cook and Collins

Escaryus liber Cook and Collins, Proc. U. S. Nat. Mus., XIII, p. 394, (1891). [Kirkville, New York.]

The number of pairs of legs and the non-suturate ultimate pedal pretergite are especially characteristic of this species.

Specific Diagnosis.—Length: to 29 mm. Color: typically waxy-white. Cephalic plate: distinctly much longer than wide (37: 27). Labrum: with about 10–13 teeth. First maxillæ: telopodital lappets tiny, the apex of each at most half as long as the second article of the telopodite; coxosternal lappets absent or at most represented by obscure and sparsely setose mounds. Prehensorial telopodite: femoral denticle absent, denticles of remaining articles tiny. Pairs of legs: 47 or 49 (usually 47) in the male, 47 or 49 (usually 49) in the female; legs almost glabrous. Ultimate pedal segment: coxopleuron with some 18–25 large and small pores: pretergite nonsuturate laterally.

Distribution.—The species is known only from the following northeastern localities: NEW YORK: Ithaca, Taughannock Falls State Park; Varna; Kirkville. MARYLAND: Lanham. DISTRICT OF COLUMBIA: Washington. OHIO: Cleveland.

Escaryus urbicus (Meinert)

Geophilus urbicus Meinert, Proc. Amer. Phil. Soc., XXIII, p. 218, (1886). [Cambridge, Massachusetts.]

Escaryus phyllophilus Cook and Collins, Proc. U. S. Nat. Mus., XIII, p. 392, (1891).

[3] In his original description Chamberlin states that the first maxillæ lack lappets. Because the lappets of the telopodites are often bent back under the telopodite on microscopic preparations, it may appear that they are absent. Similarly the coxosternal lappets may escape detection owing to their minute size.

Escaryus urbicus (Meinert),—Bailey, Bull. N. Y. State Mus., no. 276, p. 44, (1928).

The characteristic number of pairs of legs and the presence of lateral sutures upon the ultimate pedal pretergite will identify *urbicus*.

SPECIFIC DIAGNOSIS.—Length: to 29 mm. Color: light yellowish-brown. Cephalic plate: slightly longer than wide (26: 25). Labrum: with about 13–17 teeth. First maxillæ: telopodital lappets tiny, the apex of each attaining less than a third the length of the second telopodite article; coxosternal lappets absent. Prehensorial telopodite: femoral denticle relatively large, about as large as that of the tibia. Pairs of legs: in both sexes 41; legs relatively hirsute. Ultimate pedal segment: each coxopleuron with some 25–35 large and small pores; pretergite suturate laterally.

DISTRIBUTION.—Outside of the northeast the species has been recorded only from Minnesota. MASSACHUSETTS: Cambridge. NEW YORK: Ithaca; Syracuse. VIRGINIA: Clifton Forge; Calf Mountain; Mountain Lake. OHIO: (locality ?).